Competition as a Rivalrous Process:
Attilio da Empoli and the Years of High Theory that might Have Been
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Abstract

The *Theory of Economic Equilibrium* was written in the period of what George Shackle calls the “Years of High Theory.” Unlike the works that Shackle discusses, da Empoli’s volume received little attention and played no part in shaping the analytical formulations of the time. The *Theory of Economic Equilibrium* offered an alternative to the then conventional approach to the treatment of competition as an adjective. For da Empoli, competition was a rivalrous process, a verb. It is arguable that had da Empoli’s formulations found their way into the literature of the time, the recent revival of interest in competition as a process would now be at a more advanced state.

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In “Maud Muller,” the 19th century American poet John Greenleaf Whittier tells the tale of a judge and a maiden, the choices they made and did not make, and the regrets and longings they came to develop. The moral to the tale is set forth in the well-known stanza:

> For of all sad words of tongue or pen,
> The saddest are these: “It might have been!”

Attilio da Empoli’s *Theory of Economic Equilibrium* evokes this image of what might have been, in this case with respect to the treatment of market competition by economists. In *The Years of High Theory*, G. L. S. Shackle examines the transformation of economic theory that took place between 1926 and 1939. The *Theory of Economic Equilibrium* was published in the middle of the years of high
theory, in 1931. This work appears nowhere in Shackle’s narrative, and while it was reviewed by Joan Robinson in the December 1933 issue of the *Economic Journal*, the book did not play a role in the formation of economic theory during these years.

Most published works receive little or no attention, and the fate suffered by the *Theory of Economic Equilibrium* is truly a common fate. What might we conclude from this neglect? It is possible to conclude that the book had nothing of significance to contribute to economic theory, and this lack of significance is the explanation for the lethargic reception it received. An alternative possibility, which is the possibility I pursue here, is that the *Theory of Economic Equilibrium* belonged to a different research program from the one whose efforts were chronicled by Shackle. In particular, the authors described in the *Years of High Theory* were pursuing a program dedicated to a static, structural treatment of competition as an adjective. In contrast, da Empoli’s book, while couched in a language of equilibrium, represented an effort to treat competition as a rivalrous process, as a verb and not an adjective. It is understandable, even if also regrettable, that a work penned from a perspective of competition as a rivalrous process would not have fit smoothly into a program dedicated to the proposition that competition is best treated as a static structure.

Once we recognize the existence of different research programs regarding market competition, it is easy to see that the value of da Empoli’s contribution would be appraised differently, depending on the research program pursued by the appraiser. The years of high theory were characterized by an almost
complete dominance of the static, structural approach to competition, an approach that was soon to be represented in terms of the now familiar linkage: structure-conduct-performance.\textsuperscript{2} Da Empoli’s treatment of market competition pointed in a different direction, toward competition as a rivalrous process. Had other economists become attracted to some of da Empoli’s formulations, it is arguable that a more dynamic orientation toward competition as a rivalrous process would have emerged more quickly within economics. If so, it can plausibly be claimed that the current state of the economic theory of competition, when understood as a rivalrous process, is less advanced than it might have been had da Empoli’s insights been incorporated into such a program.

I develop this theme in three parts. First, I discuss the treatment of market competition within economics, paying particular attention to the shift of predominant orientation from verb to adjective. Second, I examine the process of the production of economic knowledge, and the cascades, increasing returns, and path dependencies that are part of this process. Third, I locate da Empoli’s *Theory of Economic Equilibrium* within the context of the treatment of competition as a rivalrous process, a verb.

**The Transformation of Competition: From Process to Structure**

Until late in the 19\textsuperscript{th} century, competition was treated overwhelmingly by economists as a verb. Competition was a process of rivalry among competitors. There was no difference in this respect between economic competition and athletic competition. In both cases, competition was treated as a process by which competitors sought to gain an advantage over their competitors.
Competition was a continuing, ceaseless activity and not some static state of affairs.

Competition came to be regarded as an adjective only late in the 19th century. Moreover, and perhaps somewhat paradoxically, this alternative formulation was itself the result of a competition among participating economists to define a set of sufficient conditions for all units of a product to sell for the same price. This very effort, of course, transported competition from the realm of historical experience into the realm of logic. A focus on actual processes of competition gave way to a focus on those sufficient conditions that would compel a logician to conclude that all units of a product would have to sell for the same price. The effort of economists to set forth a set of sufficient conditions for all units to carry the same price led to the static formulation in terms of such conditions as full knowledge, universal price taking, and homogeneous products, as summarized by the notion of perfect competition. That such conditions and requirements had almost nothing to do with the actual organization of economic activity was irrelevant to this search for sufficient conditions, once it was underway. The best minds in the profession participated in this competitive search for sufficient conditions, and they ended up producing the standard textbook version of the perfectly competitive model, a model that almost everyone recognizes does not describe anything, but yet which became part of the corpus of economic knowledge.

The first part of Shackle’s *Years of High Theory* describes the efforts of some premier economists of their time to develop a more realistic formulation of
competition, in light of what was then the canonical formulation of perfect
competition as a particular form of market structure. These authors started from
such simple sensory observations as products are not identical, firms do not face
infinitely elastic demands, and people are far from omniscient. A new
competitive chase was underway, which resulted in the development of imperfect
or monopolistic competition, a construction that its originators thought was more
realistic than that of perfect competition.

The originators were correct. Their construction was more realistic
because it incorporated rather than denied the widespread ability of sellers to
increase their prices a bit without driving their sales to zero. It was likewise more
realistic in that it took such phenomena as advertising and other selling costs as
ordinary commercial phenomena, rather than as things excluded by the logic of
perfect competition. The pursuit of this more realistic alternative to the logic of
perfect competition could have been joined to the earlier, classical treatment of
competition as a process. It was not, however, and was joined instead to the
treatment of competition as a structure. Yet it was this very treatment of
competition as an adjective and not as a verb that was the central source of the
problem that inspired the high theorizing that generated the imperfect competition
alternative in the first place.

Had the treatment of competition as an adjective never entered
economics, and had economics continued with its treatment of competition as a
verb, such phenomena as product differentiation and selling costs would surely
have been regarded simply as various elaborations, extensions, and illustrations
of the concrete operation of competitive processes. It is, after all, surely a wrong-headed model that leads one to describe as “perfect” a situation where brown Mao jackets are the only type of coats available in stores, while labeling as “imperfect” a situation where people can choose among different styles, colors, and fabrics.

Economists are now increasingly coming to work with formulations of competition as a rivalrous process. It is surely arguable that, had the theorists of imperfect competition cast their constructions not in terms of competition as an adjective but in terms of competition as a verb, the state of economic theory in this respect would be more advanced than it presently is. At least this is the case so long as the state of advancement in any line of thought varies directly with the amount of intellectual effort expended by interested scholars. Moreover, had those articulators of a more realistic approach to competition proceeded in a process-oriented manner, some of the concepts, formulations, and concerns that were set forth in the *Theory of Economic Equilibrium* would surely have found their way into the discussion. This, anyway, is my conjecture, elaborated below, about the history that might have been.

**Competition, Cooperation, and the Production of Economics**

There is surely room for an economics of producing economics (see, for instance, Tollison 1986). Economics is centrally concerned with understanding and explaining a great societal paradox: cooperation within society can be far more effectively secured indirectly through a process of free competition than directly through planning. What is true within society generally is true among
economists as well. The production of economic knowledge is a cooperative endeavor among economists, and with that cooperation secured through a process of open competition among scholars. Economic scholarship grows through a competitively secured cooperation among economists.

It is surely the case that this competition exhibits such phenomena as cascades, increasing returns, network externalities, and path dependencies. Histories of thought typically follow a great man approach in characterizing the development of economics. While it is clearly possible to recognize giants in the history of economics, much of the process of theoretical development is a spontaneously generated order, where the order itself takes the form of a network of findings, propositions, and citations generated through interactions among scholars.

In many respects this process resembles a cascade, where scholars in the present time period infer information about the value of particular lines of inquiry from the revealed scholarly choices made by others in the previous time period. Some of these cascades will be short-lived and will subsequently be called fads. Others will have long duration, and may subsequently be called schools or traditions. In either case, to a considerable extent the flow of scholarship will resemble a series of information cascades, some broad and others narrow, some of long duration and others short-lived.

The central point in any case is that economics is generated through interactions among participants, where the analytical constructions developed and advanced by any particular participant are to a great extent based upon a
network of constructions that other scholars have developed. Any topic can be approached in an indefinitely large number of ways, though at any one time only a few such ways are typically in play. The distinction between competition as a process and competition as a structure illustrates one possible dichotomy in the treatment of competition, though other ways of treating competition are possible as well.

Of the many particular types of formulation that might be possible with respect to some such topic as competition, some of those will be advanced and attract attention. As a result, assumptions become standardized and the division between exogenous and endogenous variables becomes taken for granted. A river of thought develops, and it follows one channel, where it is conceivable that it could have followed some other channel.

If we look at this process in the middle of a cascade, we witness something that seems to have an inexorable or inevitable quality about it. Yet if we go back to where the cascade began, it may be conceivable that some alternative path might have been selected, in which case perhaps a different cascade would have emerged. With respect to the work at hand, it is plausible that the course of economic theorizing about market competition would have followed a different channel, had some of the formulations in the *Theory of Economic Equilibrium* received more attention in the early years of the years of high theory.

Besides resembling information cascades, the development of economic scholarship will generally exhibit increasing returns and network externalities.
One scholar working in an area can generate citations only to himself. Even more, one scholar can learn only from himself, and much of a scholar’s growth results from his responses to the formulations of other scholars. Suppose that between two particular formulations, one initially attracts more attention and the other. In general, we should expect to find more citations to the work of scholars who are working on the larger program. We should also expect to find greater learning among the participants of the larger program, due to the positive impact of scholarly interaction upon learning. There may be no reasonable basis for an external observer to select between the alternative formulations or programs. Nonetheless, should one formulation attracts a greater volume of initial attention, it will secure some competitive advantage to the extent that the production of scholarship is characterized by increasing returns and network externalities.

**Index Numbers and the Appraisal of Old Books**

How do we appraise old books, da Empoli’s *Theory of Economic Equilibrium* in particular? This problem of appraisal is similar to the selection of an index number to measure economic growth. Growth between two periods can be measured only by selecting some basis for comparison that is uniform between the two periods. The Paasche index bases the comparison on a basket of goods available in the current period. The Laspeyres index bases the comparison on a basket of goods that was available in the initial period.

Similar to the Paasche index, an old book can be appraised in terms of its ability to bring insight to current scholarly concerns. This is illustrated by the
rediscovery of old texts that subsequently are acknowledged to have good value to add to contemporary analytical endeavors. Most old books would not have present scholarly value when judged by this standard. In contrast, the analogy to the Laspeyres index would seek to appraise a book in terms of what its potential might have been at the time it was written, even if that potential was not realized in the subsequent development of economic theory.

Whichever approach to valuation is taken, the value placed on an old work will also depend on the research program through which it is being evaluated. This is true regardless of whether an old work is appraised in terms of what value it might bring to contemporary discourse or in terms of what value it might have had when it was written, if only it had entered into such discourse at that time.

It is easy enough to read the *Theory of Economic Equilibrium* as just one more statement of market competition as a structure or condition. It is, after all, cast in the language of equilibrium, and this alone might seem to locate da Empoli within the same analytical framework as the other participants during the years of high theory. This would, however, be mistaken, just as it would be mistaken to classify Frank Knight this way because of the constructions he used in Part II of *Risk, Uncertainty, and Profit*, the part titled “Perfect Competition.” It is quite clear that Knight’s genuine contribution was in Part III, the part titled “Imperfect Competition through Risk and Uncertainty.”

To be sure, Knight referred to “imperfect competition” in Part III, which might seem to render this state of affairs inferior to the “perfect competition” that was examined in Part II. This rendition, however, runs sharply contrary to the
unmistakable tenor of *Risk, Uncertainty, and Profit*, which is clearly one of
competition as a rivalrous activity. A number of commentators have remarked on
what seems to be a stark inconsistency between Parts II and III of *Risk,
Uncertainty, and Profit*. Such remarks have perhaps been advanced from a
vantage point of having seen a greater interest in competition as a process than
existed in the 1920s, where competition as an adjective had assumed a
dominating position.

There are several places where the *Theory of Economic Equilibrium* offers
or points toward a process-oriented approach to market competition. In saying
this I do not mean to suggest that that there is still material in the *Theory of
Economic Equilibrium* that could simply be incorporated into contemporary
scholarship on competition as a rivalrous process. Rather I mean to claim that
had there existed an active research program on competition as a rivalrous
process in 1931, the *Theory of Economic Equilibrium* would almost surely have
attracted attention and would have been drawn into this alternative stream of
scholarship.

Da Empoli treats with the division of labor as a foundation for economic
inquiry. Most economists do not do this. One cannot set the division of labor as
a foundation stone without setting the division of knowledge beside it. The
division of labor and the division of knowledge are simply two sides of the same
coin, so to speak. A formulation that starts with the division of labor in society,
and of the division of knowledge, leads almost inexorably into a process-oriented
view of market competition. It is easy to see how da Empoli’s formulations would
have meshed nicely with F. A. Hayek’s (1948) subsequent formulations of the
division of knowledge and its use in society. These formulations are, of course,
far, far removed from any notion of competition as an adjective or stationary
state.

Da Empoli resists the use of continuity and infinite variation, despite the
obvious analytical simplicity that would result from doing so. He does so out of
an expressed desire to get “nearer to the reality of the concrete phenomena than
the current theory (p. 7).” He further notes that scientific progress requires “the
overcoming of difficulties and obstacles, not the avoiding of them (p. 8).” The
subtitle of the Theory of Economic Equilibrium was “A Study of Marginal and
Ultramarginal Phenomena.” In terms of the standard approach to competition,
the distinction between marginal and ultramarginal would seem to be little other
than confusing. In conjunction with the imposition of continuous variation,
marginal and ultramarginal would represent simply different regions along some
common function. For da Empoli, however, the distinction was an important tool
for thinking about competition as a process. The marginal phenomenon
represented what was currently known and what was presently in place. The
ultramarginal phenomenon represented what was not presently known nor
currently in place, but yet could arise to offer competition that does not now exist.

The world does not stand still, competition is not some static state.
Rather, the world is continuously in motion, and entrepreneurs must continually
be alert if they are to remain competitive, otherwise they will soon be left behind.
Even continual alertness is not sufficient to guarantee that an entrepreneur will
remain competitive, though it is surely necessary. Da Empoli stresses differences in entrepreneurial and managerial ability as an important source for the generation of economic phenomena. There is no doubt in my judgment that the orientation toward market competition and the importance of entrepreneurship that informed da Empoli’s work bears a family resemblance to Israel Kirzner’s 1973 formulation of *Competition and Entrepreneurship*.

What kinds of particular formulations might have emerged within economics had da Empoli’s orientation toward competition as a rivalrous process been pursued in the years following its publication is something about which we can only speculate. It is possible, however, to offer plausible descriptions of some of the changes in analytical orientation that are likely to have resulted from a robust pursuit of the orientation toward economic phenomena that is central to the *Theory of Economic Equilibrium*. George Akerlof’s (1970) well-received treatment of product quality is developed wholly within a treatment of competition as an adjective. Akerlof formulates a setting where the owners of cars know the quality of their cars, but potential buyers have no idea of the relative quality of different cars that are available for purchase. In Akerlof’s formulation, bad cars, “lemons”, rule the market, as good cars are withdrawn from the market because buyers, being unable to distinguish good from bad cars, will pay no more for good cars than they would pay for bad cars.

It is easy enough to offer reasonable conjecture about how Akerlof’s formulation of the lemons problem might have been treated in light of da Empoli’s treatment of competition as a rivalrous process that generates a continuing
extension of the market (as discussed particularly in Chapter 4, “Markets”). In the early days of cars, a lemons problem could well have existed at one time. The process of competitive rivalry, however, would continually extend the reach of the market to incorporate what were previously ultramarginal phenomena. It is easy to see how the alternative research program to which the Theory of Economic Equilibrium was truly addressed would have led naturally into a recognition that new market forms, arrangements, and customs would arise, converting what were once ultramarginal phenomena into marginal phenomena in the process. With respect to Akerlof’s illustration of cars, the development of a custom of allowing test drives and third party inspections would be a custom that would extend the market. The creation of guarantees and warranties would likewise illustrate the development of market practices that would extend the reach of the market.

To be sure, Akerlof recognizes these possibilities in a brief closing section, but this recognition is appended as a kind of afterthought to his main line of argument. This is how it is with the static, structural approach to market competition. In the alternative approach to competition that animated da Empoli’s effort, the prime analytical focus would be shifted to the continuing extension of the market that resulted through competition. It is easy to imagine how a scholarly cascade that pursed a treatment of competition as a verb in response to da Empoli’s Theory of Economic Equilibrium would have led to themes that only lately have begun to be incorporated into economics. Much of this incorporation has occurred under such research programs as new
institutional economics and Austrian economics. It is perhaps unfortunate that da Empoli chose the title he did, for these days it does invite misunderstanding about his central animating vision. That vision, however, clearly was not one of static, structural equilibrium. It was most certainly one of competition as a dynamic, rivalrous process that leads continually to an extension of the market through entrepreneurial effort.

In Summation

The Theory of Economic Equilibrium does bear a sad tale, though surely one not nearly so poignant as that conveyed by John Greenleaf Whittier in “Maud Muller.” The fortunes of a work of scholarship do depend on the quality of the craftsmanship, but they also depend on the presence of supporting complementary inputs that are sufficiently robust to create a vigorous research program. The Theory of Economic Equilibrium presented some analytical constructions that might well have played a positive role in a research program devoted to a process-oriented approach to market competition in the 1930s, only such an approach was then nearly non-existent. There is no doubt that the craftsmanship displayed by the Theory of Economic Equilibrium could have been improved, and this might have attracted greater interest in its underlying orientation. Yet the renewed interest in competition as a process has become apparent only in the last 30 years or so. The Theory of Economic Equilibrium might have played an important part in fashioning scholarly formulations about
competition from a market process orientation, but the necessary complementary inputs in terms of scholarly interest were simply not there.
References


Endnotes

1 On the distinction between competition as a verb and as an adjective in the history of economics, and the different research programs they entail, see Paul McNulty (1967).
2 To be sure, this situation holds more fully for English language economics. For an alternative presentation of competition as an activity, see Wolfgang Kerber (1989).
3 On this competitive search, see George Stigler (1957).
4 For an examination of this process with respect to science generally, see Gordon Tullock (1966).
5 On cascades in general, see Bikhchandani, Hirshleifer, and Welch (1992). For a laboratory experiment on the generation of cascades, see Anderson and Holt (1997).
6 The central issues are examined with particular lucidity in Warren Nutter (1966).